



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST FOR RELIEF FROM

AMERICAN SOCIETY OF MECHANICAL ENGINEERS CODE

REPAIR REQUIREMENTS FOR CODE CLASS 3 PIPING

GRAND GULF NUCLEAR STATION

ENTERGY OPERATIONS, INC

DOCKET NO. 50-416

1.0 INTRODUCTION

By letter dated April 1, 1999, Entergy Operations, Inc. (the licensee), requested relief from the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (the ASME Code or the Code or Code), Section XI requirements for repair of a leak in an ASME Code Class 3, moderate energy pipe at the Grand Gulf Nuclear Station (GGNS). The leak was from the tail pipe of the discharge relief valve for the Standby Service Water (SSW) "A" pump, and was discovered when the SSW "A" system was in service to support shutdown cooling during a forced outage. The tail pipe is an 8-inch diameter, schedule 40 pipe with a design temperature of 90 °F and design pressure of 10 psi. The flawed area in the pipe wall is approximately 0.5 inch in diameter. The wall thickness tapers smoothly from nominal at the outer edges of the flaw to the through wall hole near the center of the flaw.

Part 50.55a(g) of Title 10 of the *Code of Federal Regulations* (10 CFR 50.55a(g)), requires nuclear power facility piping and components to meet the applicable requirements of Section XI of the Code. The Code specifies acceptable repair methods for flaws in piping that exceed Code acceptance limits. In some circumstances, the required Code repair of a component may be impractical depending upon system requirements which may prevent component isolation during various operational modes of the facility. In such cases, the Nuclear Regulatory Commission (NRC) may evaluate determinations of impracticality, grant relief, and impose alternative requirements pursuant to 10 CFR 50.55a(g)(6)(i). Generic Letter (GL) 90-05, "Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1, 2, and 3 Piping" (dated June 15, 1990), provides guidance to the staff for evaluating relief requests submitted by licensees for temporary non-Code repairs to Code Class 3 piping.

2.0 EVALUATION

NRC Inspection Report No. 50-416/99-04, dated April 23, 1999, contains detailed information regarding this pipe leakage issue. The leakage from the tail pipe was detected on September 24, 1998. The licensee immediately performed an operability assessment, which concluded that Train "A" SSW was operable and, consequently, SSW flow rate would not be

affected and room flooding would not result. At that time, no consideration was given to requirements of the ASME Code or the GGNS Technical Requirements Manual regarding this pipe leakage. On February 25, 1999, the licensee became aware of the situation and performed portions of the operability criteria in GL 90-05, including nondestructive examination of the pipe wall, periodic inspections of the leak location, and minimizing pump starts. On March 10, 1999, the leaking tail pipe section was replaced in accordance with ASME Code requirements. During the time interval between initial detection of leakage from the tail pipe and the tail pipe repair, the licensee did not submit a relief request to the NRC. As a result of these events, the NRC determined, in its inspection report mentioned above, that a noncited violation (NCV) occurred. This violation is in the licensee's corrective action program as CR 1999-0250 (NCV 50-416/9904-03). As a response to the NCV identified by the NRC, the licensee submitted a relief request in accordance with the provisions of GL 90-05.

For the staff to consider the licensee's relief request from the ASME Code requirements and the licensee's use of temporary non-Code repair (or no repair), the licensee has to perform the following in accordance with GL 90-05: (1) impracticality determination, (2) root cause determination, (3) flaw evaluation, and (4) augmented inspection. Items (1), (2), and (4) had been performed by the licensee before this relief request was submitted as indicated in the NRC inspection report. As to Item (3), the licensee stated in this submittal that "The evaluation concluded that the flaw meets the stability requirements specified in enclosure 1 of the GL [90-05] and that the condition was acceptable for continued service." The staff accepted this statement based on the fact that the flawed tail pipe was operable until its final replacement on March 10, 1999, and the flaw was stable during the five month period before this final replacement. Based upon the above, the staff determined that the licensee has evaluated the flaw in accordance with GL 90-05 and agrees with the licensee's conclusion that the piping structural integrity was adequate for operation of the SSW "A" system with no repair during the time period from September 24, 1998, to March 10, 1999.

### 3.0 CONCLUSION

Since a Code repair had already been performed by the licensee prior to submittal of this relief request, the staff's granting of this relief after the fact indicates that if a relief request was submitted right after the detection of the leakage, a relief would have been granted. The relief is justified in this case because (1) the Code requirements for pipe repair are impractical due to the inability to isolate the piping in the mode of operation in effect at the time the need for repair was discovered, and (2) continued operation of the system was justified by the licensee's demonstration of the piping structural integrity without repair of the flawed section of pipe. Pursuant to 10 CFR 50.55a(g)(6)(i) and consistent with the guidance in GL 90-05, relief from the ASME Code repair requirements for the SSW "A" system piping is granted for the period of time from September 24, 1998, to March 10, 1999. This relief should not affect the issued NCV.

Principal Contributor: Simon C. F. Sheng

Date: December 29, 1999